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**DEVICE AND METHOD FOR THE USER-BASED PROCESSING OF
ELECTRONIC MESSAGES WITH FILE ATTACHMENTS****CROSS REFERENCE TO RELATED APPLICATIONS**

This application is the US National Stage of International Application No. PCT/EP2004/051042, filed June 7, 2004 and claims the benefit thereof. The International Application claims the benefits of German application No. 10330282.4 DE filed July 4, 2003, both of the applications are incorporated by reference herein in their entirety.

FIELD OF INVENTION

[0001] The present invention relates to a device and method for the user-based processing of electronic messages with file attachments and particularly to a device and method for replacing file attachments in a user-based e-mail.

BACKGROUND OF INVENTION

[0002] Electronic messages or e-mails have become an increasingly accepted form of communication in modern telecommunications networks in both the business sphere and the personal sphere.

[0003] Figure 1 is a simplified block diagram of a conventional telecommunications network of this kind for sending electronic messages, N being a network such as the internet, for example. Conventionally connected to this network N is a plurality of telecommunications terminals E1 to E3 in the form of, for example, personal computers (PCs), which conventionally have what is called an "e-mail client" as a transmitter and receiver of electronic messages. Known SMTP (Simple Mail Transport Protocol) e-mail clients are, for example, Lotus Notes™, Microsoft Outlook™ and so on, and they are stored locally as what are called "application programs" in the telecommunications terminals E1 to E3.

[0004] A user or one of the telecommunications terminal E1 to E3 has, as a rule, what is called an "e-mail box" or "mailbox" on a central server S. That is where all incoming and outgoing electronic messages or e-mails are temporarily stored and forwarded to

appropriate further messaging servers (mail servers) (not shown) in the network N. When electronic messages or e-mails are received from this mail server S, conventionally all temporarily stored electronic messages are also filed on the local telecommunications terminals E1 to E3 or their associated local e-mail clients. The size of the central mailbox or central messaging box available to the user is normally limited. So if a user receives extensive file attachments to a particular e-mail or electronic message, these are filed both in the central mailbox and in the local e-mail client of the telecommunications terminal E1 to E3.

[0005] To enable particular data to be otherwise accessed, each user will store the file attachments of a particular electronic message or e-mail again in his user file system, to which he conventionally has personal access rights. As a result, however, the file attachment is now stored twice or three times, being filed both in the central mailbox, in the local mailbox or the e-mail client, and in the user file system. This results in higher costs owing to the increased memory required. If, on the other hand, the user removes the file attachments from the electronic message, vital information is lost, for example the location where the attachments have been stored, or the relationship between the explanatory text of the electronic message and the file attachment.

SUMMARY OF INVENTION

[0006] An object of the invention is therefore to provide, for the user-based processing of electronic messages with file attachments, a device and method enabling a reduced memory capacity requirement to be achieved.

[0007] According to the invention, this object is achieved in the features in the independent claims.

[0008] The file attachments of the electronic message are preferably replaced by a memory location link to a user-selected memory location in a user file system and are saved at a user-selected memory location in the user file system. As a result, the file attachment has to be saved only once in its full size, and memory capacity can thus be reduced.

[0009] At the user-selected memory location in the user file system a message link

can also be created or saved as a cross-reference to the modified electronic message. This also provides a backlink to the original e-mail or electronic message for each stored file attachment. Handling of the file attachments filed in the user file system is thereby substantially improved.

[0010] Although the same file name is preferably used when saving the file attachments, alternatively the file name can be amended or modified when saving. In the same way, the backlinks or message links can also have automatically amended file names of the file attachments. In this way, a user has maximum flexibility when filing file attachments.

[0011] The file attachments can, moreover, be saved according to user-defined rules or in a user-set file structure. This results in further simplification and adaptation to a user's personal needs.

[0012] With regard to the device for the user-based processing of electronic messages, preferably an e-mail client is used for sending/receiving electronic messages with file attachments, an attachment substitution unit is used for replacing the file attachments by a memory location link, a user file system is used for storing the file attachments, an attachments insertion unit is used for inserting the replaced file attachments at a selected memory location in the user file system, and a control unit is used for controlling the relevant components. In this way, relatively minor modifications in a telecommunications terminal such as a PC can lead to an appropriately user-friendly and memory-optimized filing system for file attachments.

[0013] Further advantageous developments of the invention are characterized in the further dependent claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The invention is described in more detail below on the basis of an exemplary embodiment and with reference to the drawing, in which:

Figure 1 is a simplified block diagram of a conventional telecommunications network;

Figures 2A to 2D are simplified screen shots of an electronic message, to illustrate the method according to the invention;

Figure 3 is a simplified screen shot of a user file system, to illustrate the method according to the invention;

Figure 4 is a simplified block diagram of a device according to the invention for the user-based processing of electronic messages; and

Figure 5 is a flowchart to illustrate essential method steps when the method according to the invention for the user-based processing of electronic messages is carried out.

DETAILED DESCRIPTION OF INVENTION

[0015] Figures 2A to 2D show simplified screen shots of an e-mail client, to illustrate essential method steps of the method according to the invention for the user-based processing of electronic messages.

[0016] According to Figures 2A to 2D, Microsoft's Outlook™ program, for example, is used as the SMTP e-mail client or as the program for processing the electronic messages, as installed in telecommunications terminals for example.

[0017] Other e-mail programs or e-mail clients can, of course, be used in the same way.

[0018] According to Figure 2A, a user receives, for example, a "test e-mail" with explanatory text relating to an e-mail-attachment, and a file attachment with the name "Example.doc". Both the explanatory text and the file attachment are stored by the e-mail program or e-mail client in a separate backup file (e.g. *.pst file). However, there is usually a need to use, in particular, the file attachments also outside the e-mail client or application program and to file or manage them in a separate user file system.

[0019] The invention is now used in this saving process. According to Figure 2B for example, the file attachment "Example.doc" can be highlighted by pressing or clicking the right-hand mouse button, and a window opens with the options known from

Microsoft Windows™. In addition to the usual options known from the Windows operating system, such as "Open", "Print", "Save As...", "Quick View", "Cut", "Copy" and so on, this window also has a further command "Save As... & Link". With this the highlighted file, i.e. the file attachment "Example.doc", is replaced by a memory location link to a user-selected memory location in a user file system and the electronic message is thereby modified. To be more precise, the file attachment is cut, then the file attachment is temporarily stored in a temporary memory buffer, and lastly the memory location link is inserted in the e-mail.

[0020] As the next step after clicking on the "Save As... & Link" command, Figure 2C shows a likewise conventional Windows™ screen shot where it is now possible to select the location or rather the user file system under which the file attachment is to be stored. Here a user also has the option of amending the file name of the file attachment and of creating a specific file structure or of setting predetermined rules for saving the file attachment.

[0021] Clicking on the "Save" field in Figure 2C causes the file attachment "Example.doc" to be replaced by a memory location link "file://Home disk drive/Example/Example.doc" as shown in Figure 2D. When the electronic message is closed, the amendments made are stored accordingly in the e-mail client or application program and the electronic message is thereby modified.

[0022] The memory location link indicated in the electronic message has a substantially smaller memory capacity requirement (approx. 1 kilobyte) than the actual file attachment, which leads to optimization of the available memory capacity requirement. Nevertheless, no information is lost, since the electronic message still has a link to the actual file attachment. Thus, for example, double clicking on the memory location link "file://Home disk drive/Example/Example. doc" opens the required file attachment at any time.

[0023] Figure 3 shows a simplified screen shot of a user file system, to illustrate the procedures for saving a file attachment which has been replaced accordingly. Here the same reference characters again denote the same or corresponding elements and the description will not be repeated.

[0024] According to Figure 3, a file management application program such as Microsoft Explorer™ is, for example, used to open the memory location in the user file system in which the file attachment "Example.doc" has been filed by means of the above-mentioned command "Save As... & Link".

[0025] The user thus has the usual options for managing the file attachment "Example.doc" transmitted by means of the electronic message.

[0026] With the method according to the invention, there is also the option not only of replacing a file attachment by a memory location link such as "file://Home disk drive/Example/Example.doc" in the electronic message but also, when the file attachment is saved, of creating a message link in the form of what is called a "backlink" to the modified electronic message at the user-selected memory location in the user file system.

[0027] To be more precise, according to Figure 3 an additional file "Link with Example.msg" is generated in the same folder as the file attachment "Example.doc". This additional file represents a backlink to the e-mail client or messaging application program and, for example, double clicking on this backlink automatically opens the thus associated electronic message, e.g. "Test e-mail". There is thus a link not only from the electronic message to the user file system but also from the user file system back to the electronic message.

[0028] This backlink or message link preferably has the same name as the file attachment; this substantially simplifies retrieval of the original e-mail. If the file name was amended when the at least one file attachment was saved according to Figure 2C, the amended file name of the file attachment is preferably also taken into account and used accordingly when the message link is created.

[0029] As already indicated, the procedure for saving the file attachments can also be filed in a user file system according to user-defined rules and/or in a user-defined file structure. This results not only in memory capacity optimization but also in a particularly user-friendly filing system for file attachments.

[0030] Figure 5 is a flowchart to illustrate essential method steps of the method according to the invention for the user-based processing of electronic messages with file

attachments. Here, in a step S1, for example an e-mail client or messaging application program is launched. If an electronic message has a file attachment, in a step S2 the file attachment is replaced by a memory location link to a selected memory location in the user file system, and the electronic message is modified accordingly. In a step S3, the file attachment is saved at the selected memory location in the user file system and, in an optional step S4, a backlink or message link to the modified electronic message is created at the selected memory location in the user file system. In a step S5, the method according to the invention is terminated.

[0031] Described below is an appropriate device for implementing the method described above, and this device can be particularly easily provided in any telecommunications terminal.

[0032] Figure 4 is a simplified block diagram of a device according to the invention for the user-based processing of electronic messages. Here reference character 1 denotes an e-mail client or messaging application program which is, for example, the Microsoft Outlook™ or Lotus Notes™ program described above. An attachment substitution unit 2 is used here to replace the file attachment of an electronic message of the e-mail client 1 by an appropriate memory location link as described above. An attachments insertion unit 4 is, furthermore, used to insert the replaced file attachment at a selected memory location in a user file system 3, which is preferably configured on the local hard disk or directly in the telecommunications terminal. However, user file systems can normally also be located in an internal or external network, provided that it is possible for only one particular user to log on to them.

[0033] According to Figure 4, the attachments insertion unit 4 can also have a link insertion unit 4A for inserting, at the selected memory location in the user file system 3, a message link or backlink which refers back to an electronic message with a replaced file attachment. The e-mail client 1, the attachments substitution unit 2 and the attachments insertion unit 4 are controlled by a control unit 5 for coordination purposes.

[0034] Preferably what is called an "operating system" (OS) of a respective telecommunications terminal or PC is suitable for the detailed implementation of the method described above and the associated device. In particular, the use of, moreover, a

Microsoft Windows environment enables the invention to be achieved with particularly simple means.

[0035] By avoiding the multiple storage of file attachments, substantial cost advantages can thus be achieved without adversely affecting ease of handling. Filed attachments can be retrieved particularly easily, especially by using the backlinks.

[0036] The invention has been described above with reference to the SMTP e-mail client "Microsoft Outlook™". It is, however, not limited thereto and similarly encompasses alternative e-mail clients or messaging application programs for sending/receiving electronic messages with file attachments which are memory capacity intensive.